

Title (en)

Ultrasonically welded plastic support ring for handling and testing semiconductor devices.

Title (de)

Ultraschallgeschweisstes Tragelement aus Plastikmasse zum Behandeln und Testen von Halbleiterbauelementen.

Title (fr)

Élément de support en matière plastique, soudé par ultrasons, pour manipulation et test de composants semi-conducteurs.

Publication

EP 0671763 A3 19970409 (EN)

Application

EP 95103220 A 19950307

Priority

US 20681494 A 19940307

Abstract (en)

[origin: EP0671763A2] A method of fabricating a semiconductor device comprising the steps of providing an encapsulated semiconductor device bonded to a lead frame, providing a support ring formed of a material which softens when subjected to one of ultrasonic energy or formed of a material which softens when subjected to heat insufficient to cause sufficient expansion of said lead frame relative to said support ring to cause buckling of the leads of said lead frame, preferably thermoplastic and preferably polyphenylene sulfide, disposing leads of said lead frame over said support ring and causing said leads to embed in said support ring by applying ultrasonic energy to said support ring or by applying heat to said support ring insufficient to cause sufficient expansion of said lead frame relative to said support ring to cause buckling of the leads of said lead frame. The lead frame is preferably formed of gold plated copper, solder plate or tin plate. <IMAGE>

IPC 1-7

H01L 21/48; **H01L 21/58**; **H01L 23/16**; **H01L 23/495**

IPC 8 full level

G01R 31/26 (2006.01); **H01L 21/00** (2006.01); **H01L 21/60** (2006.01); **H01L 21/66** (2006.01); **H01L 21/68** (2006.01)

CPC (source: EP KR US)

H01L 21/603 (2021.08 - KR); **H01L 21/67144** (2013.01 - EP US); **H01L 21/6835** (2013.01 - EP US); **Y10T 29/49121** (2015.01 - EP US)

Citation (search report)

- [XY] WO 9214263 A1 19920820 - OLIN CORP [US]
- [X] US 4837184 A 19890606 - LIN PAUL T [US], et al
- [XA] US 5177591 A 19930105 - EMANUEL NORBERT T [US]
- [A] EP 0434195 A1 19910626 - TEXAS INSTRUMENTS INC [US]
- [A] WO 9203845 A1 19920305 - LSI LOGIC EUROP [GB]
- [Y] PATENT ABSTRACTS OF JAPAN vol. 016, no. 150 (E - 1189) 14 April 1992 (1992-04-14)
- [Y] PATENT ABSTRACTS OF JAPAN vol. 016, no. 513 (E - 1283) 22 October 1992 (1992-10-22)
- [A] PATENT ABSTRACTS OF JAPAN vol. 008, no. 281 (E - 286) 21 December 1984 (1984-12-21)

Cited by

WO9807188A1

Designated contracting state (EPC)

DE FR GB IT NL

DOCDB simple family (publication)

EP 0671763 A2 19950913; **EP 0671763 A3 19970409**; JP H07302822 A 19951114; KR 950034640 A 19951228; TW 269739 B 19960201; US 5661900 A 19970902

DOCDB simple family (application)

EP 95103220 A 19950307; JP 4723595 A 19950307; KR 19950004485 A 19950306; TW 84102932 A 19950327; US 20681494 A 19940307